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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : JIANG, Shibo and DEBNATH, Asim Kumar

U.S. Serial No.: 10/706,027

Filed Date : November 12, 2003

For : COMPOUNDS FOR INHIBITION OF HIV INFECTION BY BLOCKING HIV ENTRY

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December 16, 2003

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

INFORMATION DISCLOSURE STATEMENT

In accordance with their duty of disclosure under 37 C.F.R. §1.56, Applicants would like to direct the Examiner's attention to the following references which are listed below and on PTO/SB/08B (**Exhibit A**), with each individual reference further attached as **Exhibit 1** through **14**.

1. Chan , D. C., C. T. Chutkowski , and P. S. Kim . 1998. Evidence that a prominent cavity in the coiled coil of HIV type 1 gp41 is an attractive drug target. Proc. Natl . Acad. Sci . U S A 95:15613-15617. **[Exhibit 1]**
2. Chan , D. C., D. Fass , J. M. Berger , and P. S. Kim . 1997. Core structure of gp41 from the HIV envelope glycoprotein. Cell 89:263-273. **[Exhibit 2]**
3. Debnath, A. K., L. Radigan, and S. Jiang. 1999. Structure-based identification of small molecule antiviral compounds targeted to the gp41 core

structure of the human immunodecifiency virus type 1. J. Med. Chem. 42:3203-3209. **[Exhibit 3]**

4. Eckert, D. M., V. N. Malashkevich, L. H. Hong, P. A. Carr, and P. S. Kim . 1999. Inhibiting HIV-1 entry: discovery of D-peptide inhibitors that target the gp41 coiled-coil pocket. Cell 99:103-115. **[Exhibit 4]**
5. Ernst, J. T., O. Kutzki, A. K. Debnath, S. Jiang, H. Lu, and A. D. Hamilton. 2002. Design of a Protein Surface Antagonist Based on alpha-Helix Mimicry: Inhibition of gp41 Assembly and Viral. Angew. Chem. Int. Ed Engl. 41:278-281. **[Exhibit 5]**
6. Jiang, S. and A. K. Debnath. 2000. A salt bridge between an N-terminal coiled coil of gp41 and an antiviral agent targeted to the gp41 core is important for anti-HIV-1 activity. Biochem. Biophys. Res. Commun. 270:153-157. **[Exhibit 6]**
7. Jiang, S., K. Lin, and M. Lu. 1998. A conformation-specific monoclonal antibody reacting with fusion-active gp41 from the HIV-1 envelope glycoprotein. J. Virol. 72:10213-10217. **[Exhibit 7]**
8. Jiang, S., K. Lin, N. Strick, and A. R. Neurath. 1993. HIV-1 inhibition by a peptide. Nature 365:113. **[Exhibit 8]**
9. Jiang, S., K. Lin, L. Zhang, and A. K. Debnath. 1999. A screening assay for antiviral compounds targeted to the HIV-1 gp41 core structure using a conformation-specific monoclonal antibody. J. Virol. Methods 80:85-96. **[Exhibit 9]**
10. Jiang, S., Q. Zhao, and A. K. Debnath. 2002. Peptide and Non-peptide HIV Fusion Inhibitors. Curr. Pharm. Des. 8:563-580. **[Exhibit 10]**
11. Lin, P. F., W. Blair, T. Wang, T. Spicer, Q. Guo, N. Zhou, Y. F. Gong, H. G. Wang, R. Rose, G. Yamanaka, B. Robinson, C. B. Li, R. Fridell, C. Deminie, G. Demers, Z. Yang, L. Zadjura, N. Meanwell, and R. Colonno.

2003. A small molecule HIV-1 inhibitor that targets the HIV-1 envelope and inhibits CD4 receptor binding. Proc. Natl. Acad. Sci. U. S. A 100:11013-11018. **[Exhibit 11]**

12. Liu, S., Q. Zhao, and S. Jiang. 2003. Determination of the HIV-1 gp41 postfusion conformation modeled by synthetic peptides: applicable for identification of the HIV-1 fusion inhibitors. Peptide In press. **[Exhibit 12]**
13. Weissenhorn , W., A. Dessen , S. C. Harrison , J. J. Skehel , and D. C. Wiley . 1997. Atomic Structure of the Ectodomain from HIV-1 gp41. Nature 387:426-428. **[Exhibit 13]**
14. Zhao, Q., J. T. Ernst, A. D. Hamilton, A. K. Debnath, and S. Jiang. 2002. XTT formazan widely used to detect cell viability inhibits HIV type 1 infection in vitro by targeting gp41. AIDS Res. Hum. Retroviruses 18:989-997. **[Exhibit 14]**

If a telephone interview would be of assistance in advancing prosecution of the subject application, Applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

No fee is deemed necessary in connection with the filing of this Information Disclosure Statement. However, if any additional fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 50-1891.

I hereby certify that this paper is being deposited this date with the U.S. Postal Service with sufficient postage for first class mail addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Albert Wai Kit Chan 12/16/03

Albert Wai-Kit Chan Date
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Respectfully submitted,

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Compl te if Known	
Application Numb r	10/706,027
Filing Dat	November 12, 2003
First Nam d Inv ntor	JIANG, Shibo
Art Unit	
Examiner Name	
Attorney Docket Number	706-A-US

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	1	Chan , D. C., C. T. Chutkowski , and P. S. Kim . 1998. Evidence that a prominent cavity in the coiled coil of HIV type 1 gp41 is an attractive drug target. Proc. Natl . Acad. Sci . U S A 95:15613-15617.	
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	4	Eckert, D. M., V. N. Malashkevich, L. H. Hong, P. A. Carr, and P. S. Kim . 1999. Inhibiting HIV-1 entry: discovery of D-peptide inhibitors that target the gp41 coiled-coil pocket. Cell 99:103-115.	
	5	Ernst, J. T., O. Kutzki, A. K. Debnath, S. Jiang, H. Lu, and A. D. Hamilton. 2002. Design of a Protein Surface Antagonist Based on alpha-Helix Mimicry: Inhibition of gp41 Assembly and Viral Fusion. Angew. Chem. Int. Ed Engl. 41:278-281.	
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	10	Jiang, S., Q. Zhao, and A. K. Debnath. 2002. Peptide and Non-peptide HIV Fusion Inhibitors. Curr. Pharm. Des. 8:563-580.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08B (04-03)
Approved for use through 04/30/2003. OMB 0651-0031
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(Use as many sheets as necessary)

Sheet 2 of 2

Complet if Known	
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First Named Inventor	JIANG, Shibo
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Attorney Docket Number	706-A-US

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	11	Lin, P. F., W. Blair, T. Wang, T. Spicer, Q. Guo, N. Zhou, Y. F. Gong, H. G. Wang, R. Rose, G. Yamanaka, B. Robinson, C. B. Li, R. Fridell, C. Deminie, G. Demers, Z. Yang, L. Zadjura, N.	
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